2017

Immunization Safety: Addressing Parental Safety Concerns

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Northern Counties Health Care, Inc.

COMPLETE, COMPASSIONATE CARE FOR THE WHOLE FAMILY, IN OUR HOME OR YOURS.

Immunization Safety: Addressing Parental Safety Concerns

Hardwick Area Health Center

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October-November 2017

Faculty Mentors: Dr. LeClerc, Dr. Sher, Dr. Buckley

Problem Identification

- Rumors and misinformation regarding vaccine safety have circulated since 1998, when a study published by Andrew Wakefield alleged a link between autism and vaccines. The study had no "control" groups, only studying twelve children with autism who had been vaccinated as children. The paper was retracted by publishing journal as well as the majority of the co-authors. Later, Wakefield was found guilty of fraud, as it was discovered he had falsified data and received payments from law firms seeking to sue vaccine manufacturers.
- A study published in 2011 found that parents' top vaccine-related concerns included the number of vaccines during the first 2 years of life, administration of too many vaccines in a single doctor visit, and a possible link between vaccines and autism.
- More than 10% of parents of young children refuse or delay vaccinations, with most believing that delaying vaccine doses is safer than providing them in accordance with the Centers for Disease Control and Prevention's recommended vaccination
- Even among parents who do vaccinate, more than a quarter believe that delaying vaccines is safer
- In Vermont, while parents can no longer claim Philosophical Exemption for their children, they are still able to claim Religious Exemption to op-out of vaccinations
- In Vermont in 2015:
  - 89% DTaP vaccine (≥4 doses) in children 19-35 months old
  - 95% MMR vaccine (≥1 dose) in children 19-35 months old
  - 87% Varicella vaccine (≥1 dose) in children 19-35 months old

Public Health Cost

- In the US, the rates of both measles and pertussis are on the rise. Measles, once declared eradicated from the United States, has recently resurfaced, with 667 cases in 2014 and 189 in 2015, according to the CDC. Pertussis dropped to fewer than 2,000 US cases for several years in the 1970-80s before increasing to 48,000 cases in 2012, a 60-year high, according to the CDC.
- Costs to families: during a pertussis outbreak in New York during 1995-96 and found costs to families were $2,822 per ill infant (4044 in 2017 dollars) and did not include cost to insurers or costs of possibly infecting others
- Costs to insurers: with congenital rubella syndrome over his or her lifetime is estimated to be about $143,000 in 2014 dollars
- Costs of containment: in one instance during the 2005 measles outbreak cost of containment for ONE individual costs public health authorities $62,216
- Cost to society: illness and lost productivity from unvaccinated individuals, 18 years and older, is estimated to be $7.1 billion in 2015

Community Perspective on Issue

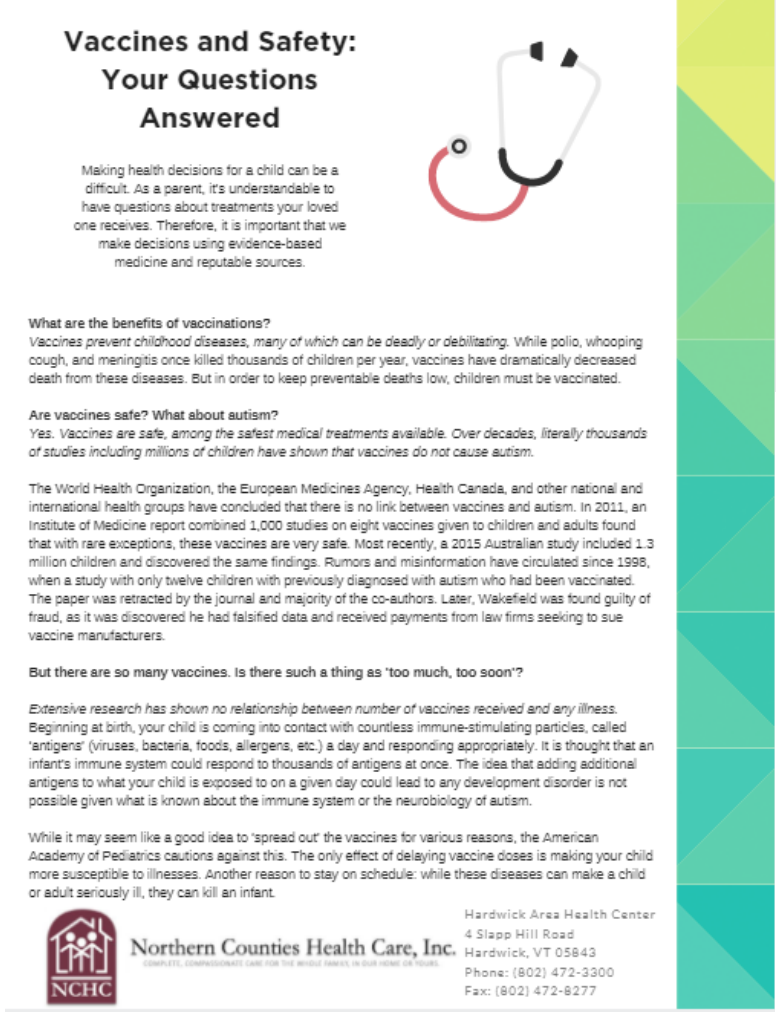
- Community Interviews:
  - Dr. Mackalyn LeClerc MD, Family Medicine Physician, Hardwick Area Health Center
  - Martha Marshfield FNP, Family Medicine Nurse Practitioner, Hardwick Area Health Center
- Important Themes:
  - Anecdotally, fairly low vaccination rates, anti-vaccination sentiment present in area which tends to be vocal about believes
  - Patients may not fully understand risks, especially with diseases avoided by vaccines are difficult to comprehend, as they are not currently in community
  - Patients do not see mumps, measles, and polio; therefore, the threat seems remote, may not grasp severity of diseases
  - Provider Goals: Education on the true risks and benefits of vaccination, but respect the rights of parents to make health decisions for children
  - Area of contention, difficulty walking the line between education and confrontation
  - Epidemic certainly possible here, especially in pockets where vaccination rates can be below average

Intervention and Methodology

- Create patient education materials regarding:
  - Past and current research
  - Common misconceptions
  - Current guidelines
- Supply reading materials in Waiting Room
- Post copies in Exam Rooms to read while waiting for clinician
- Make copies for patients wishing to take information home
- Provide further resources to patients and parents

Results

- Educational materials, entitled, “Vaccines and Safety: Your Questions Answered” complied and distributed in waiting and examination rooms
  - Aim to educate parents while waiting for the doctor
  - Help physicians point to data about vaccine safety
  - Allow physicians to distribute materials for at-home reading
- Staff and clinicians made aware of informative materials



Vaccines and Safety: Your Questions Answered

Making health decisions for a child can be a difficult. As a parent, it's understandable to have questions about treatments your loved one receives. Therefore, it is important that we make decisions using evidence-based medicine and reputable sources.

What are the benefits of vaccinations?
Vaccines prevent childhood diseases, many of which can be deadly or debilitating. While polio, whooping cough, and meningitis once killed thousands of children per year, vaccines have dramatically decreased death from these diseases. But in order to keep preventable deaths low, children must be vaccinated.

Are vaccines safe? What about autism?
Yes. Vaccines are safe, among the safest medical treatments available. Over decades, literally thousands of studies including millions of children have shown that vaccines do not cause autism.

The World Health Organization, the European Medicines Agency, Health Canada, and other national and international health groups have concluded that there is no link between vaccines and autism. In 2011, an Institute of Medicine report combined 1,000 studies on eight vaccines given to children and adults found that with rare exceptions, these vaccines are very safe. Most recently, a 2015 Australian study included 1.3 million children and discovered the same findings. Rumors and misinformation have circulated since 1998, when a study with only twelve children with previously diagnosed with autism who had been vaccinated. The paper was retracted by the journal and majority of the co-authors. Later, Wakefield was found guilty of fraud, as it was discovered he had falsified data and received payments from law firms seeking to sue vaccine manufacturers.

But there are so many vaccines. Is there such a thing as 'too much, too soon'?

Extensive research has shown no relationship between number of vaccines received and any illness. Beginning at birth, your child is coming into contact with countless immune-stimulating particles, called 'antigens' (viruses, bacteria, foods, allergens, etc.) a day and responding appropriately. It is thought that an infant's immune system could respond to thousands of antigens at once. The idea that adding additional antigens to what your child is exposed to on a given day could lead to any development disorder is not possible given what is known about the immune system or the neurobiology of autism.

While it may seem like a good idea to 'spread out' the vaccines for various reasons, the American Academy of Pediatrics cautions against this. The only effect of delaying vaccine doses is making your child more susceptible to illnesses. Another reason to stay on schedule: while these diseases can make a child or adult seriously ill, they can kill an infant.

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Aren't these diseases eradicated?
No. In fact, the rates of both measles and pertussis are on the rise due to non-vaccination. Measles was once declared eradicated from the US due to the effectiveness of the vaccine, has recently resurfaced, with 667 cases in 2014 and 189 in 2015, according to the CDC. Pertussis dropped to fewer than 2,000 US cases for several years in the 1970-80s before increasing to 48,000 cases in 2012, a 60-year high. Under-vaccination is considered to be the main cause of these outbreaks. One study found 93% of those who contracted pertussis were unvaccinated.

Besides my child's health, why else should I have my child immunized?
Vaccines not only keep your child healthy, they help keep the community healthy. 'Herd immunity' is the term to explain the phenomenon that when a large portion of the population is immune to a disease, the non-immune people are provided a degree of protection as well. There are children in your community who cannot receive certain immunizations due to medical conditions (cancers, immune deficiencies). These children rely on their community for 'herd immunity' to not be exposed to deadly diseases.

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Evaluation of Effectiveness and Limitations

- Effectiveness:
  - May need to be evaluated over time
  - Data could be collected regarding vaccination rates at the clinic before and after educational materials provided
  - Patients could be surveyed about their beliefs about vaccine safety before and after reading educational materials
- Limitations:
  - Limited data has been collected previously on a county by county, clinic by clinic basis to assess significant impacts
  - Intervention is reliant on distribution of information and parents willingly reviewing materials
  - Small population would be reached

Recommendations for Future Interventions

- Public health studies have found that parents who delayed or refusing vaccinations because of safety concerns were significantly more likely to seek additional information about their decision from the Internet (11.4% vs. 1.1%), and significantly less likely to seek information from a doctor (73.9% vs. 93.9%). Therefore, this may indicate that vaccine safety education before and during pregnancy could be an effective intervention
- Continued research can focus on which interventions and educational resources would most effectively encourage parents to vaccinate their children
- Refine and update educational materials
- Distribute educational materials to other offices

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Interview Consent Form

- Thank you for agreeing to be interviewed. Thisproject is a requirement for the Family Medicine clerkship. It will be stored on theDana Library ScholarWorks website. Your name will be attached to your interviewand you may be cited directly or indirectly in subsequent unpublished orpublished work. The interviewer affirms that he/she has explained the nature andpurpose of this project. The interviewee affirms that he/she has consented to thisinterview.
- Yes __X___ / No _____